APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/428,679	10/27/1999	ADAM L. SELIGMAN	P98-1866	4978

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HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER
WALLACE, SCOTT A

ART UNIT	PAPER NUMBER
2671	

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/428,679	SELIGMAN, ADAM L.
	Examiner	Art Unit
	Scott Wallace	2671

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _22 August 2003_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _6-12,15-18,20 and 22-36_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _31_ is/are allowed.

6)☒ Claim(s) _6,8-12,15-18,20,22-26,28,29 and 32-36_ is/are rejected.

7)☒ Claim(s) _7,27 and 30_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Response to Arguments

1.   Applicant's arguments filed 08/11/03 have been fully considered but they are not persuasive. The applicant argues on page 12 that Freedman explicitly excludes dedicated servers or clients, however the claims 12, 15, 17, 18, 20 and 22 do not mention dedicated servers or clients. The claims mention workstations connected together over a high speed network. Freedman discloses computers connected in a network in column 5 lines 41-44 and the high speed in fig 3 and column 47-55.

2.   As per the applicant's argument that workstations are operating in parallel, this is seen Reiffin in column 2 lines 1-7. Freedman is composing a three dimensional scene which would be to computation intensive for one computer therefore having the multiple workstations do it in parallel would reduce the time that it takes to perform the computations.

3.   The applicant argues on page 12, second paragraph that "Neither is the feature of claim 18 seen in Freedman in which various one of his peers computers "owns" objects". Examiner does not see this language in claim 18. Claim 18 says "wherein the visualization console includes means for distributing said three dimensional objects for storage at the plurality of workstations over the high speed network". Freedman discloses in column 5 lines 25-40 that this is a distribution and retrieval system, therefore objects are being distributed among the workstations.

4.   The applicant argues on page 12 that "nor is the feature recited in the final clause of claim 22" taught by freedman. The final clause states that " wherein the user interactively controls the display of the subsequent three dimensional scenes by his subsequent inputs". Freedman discloses in column 1 lines 19-21 creating virtual reality worlds (scenes). Therefore this is multiple scenes. So Freedman could create subsequent scenes.

5.   As per the argument that Hoppe teaches away from Freedman because Hoppe uses a server and Freedman does not use a dedicated server: Hoppe was used to show that it is obvious to represent the models in computer graphics as meshes because it is easier to change the LOD with meshes. Polygons have to be added or deleted. Freedman is sending different LOD objects to users, therefore it would make Freedman run more efficient.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
> described as set forth in section 102 of this title, if the differences between the subject
> matter sought to be patented and the prior art are such that the subject matter as a whole
> would have been obvious at the time the invention was made to a person having ordinary
> skill in the art to which said subject matter pertains. Patentability shall not be negatived
> by the manner in which the invention was made.

7.   Claims 12,15, 17-18, 20, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Freedman et al., U.S. Patent No. 5,675,721 in view of Reiffin, U.S. Patent No. 6,330,583.

8.   As per claims 12 and 17, Freedman et al discloses a computer system for rendering a

three dimensional scene (column 1 lines 5-10), comprising: a visualization console including a

graphics processor and a display (fig 3); a plurality of workstations, connected to the visualization

console by a high speed network to enable the visualization console and the plurality of

workstations to operate together (fig 3); each of the plurality of workstations storing three

dimensional objects, the stored three dimensional objects collectively representing a three

dimensional scene (column 5 lines 25-50); and the visualization console storing identifiers of each

of the three dimensional objects stored at the plurality of workstations (column 5 lines 25-50);

wherein the visualization console is operable under user control to communicate requests to the

plurality of workstations over the high speed network, said request including identifiers of selected

ones of the three dimensional objects stored at the workstations representing a selected view of

the three dimensional scene (column 5 lines 25-50); the workstations are responsive to received

requests to operate to create LOD representations of the respective stored three dimensional

objects identified by the requests received from the visualization console and to communicate the

LOD representations of the selected three dimensional objects to the visualization console for rendering by the visualization console graphics processor to create a composite image display representation by the visualization console display of the selected view of the three dimensional scene (column 7 lines 35-50). However, Freedman does not disclose wherein the workstations are operating in parallel, this is disclosed in Reiffin in column 2 lines 1-7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the workstations of Freedman operate in parallel because this would speed up the computation time of composing the three-dimensional scene.

9.   As per claim 15, Freedman et al discloses wherein the request include a specified level of detail for the LOD representations of the selected three dimensional objects to be created by the workstations (column 7 lines 35-50).

10.   As per claim 18, Freedman et al discloses wherein the visualization console includes means for distributing said three dimensional objects for storage at the plurality of workstations over the high speed network (column 5 lines 25-50).

11.   As per claim 20, Freedman et al discloses wherein the request include a specified level of detail for the LOD representations to be created from the three dimensional objects stored at the workstations (column 7 lines 35-50).

12.   As per claim 22, Freedman et al discloses means for receiving an input from a user on the first computer column 5 lines 25-50); means for processing the input to determine a first three dimensional scene that corresponds with the input (column 5 lines 25-50); and means for receiving subsequent inputs from the user and processing the inputs to determine subsequent three dimensional scenes that correspond with the subsequent inputs, wherein the user interactively controls the display of the subsequent three dimensional scenes by subsequent inputs (column 5 lines 25-50).

13.   Claims 6, 9-11, 16, 23-26, 28-29, 32-36 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Freedman et al., U.S. Patent No. 5,675,721 in view of Hoppe, U.S. Patent No.

5,963,209.

14.   As per claim 6, Freedman et al discloses a method for utilizing a network of computers to

render a three dimensional scene (column 1 lines 5-10), comprising: sending a plurality of request

from a first computer to a plurality of other computers over a high speed network (column 5 lines

25-50), the plurality of other computers each storing high resolution three dimensional (column 1

lines 5-15) scene objects (column 5 lines 25-50), wherein the request identify selected three

dimensional objects stored at the plurality of other computers (column 5 lines 25-50); operating

the plurality of other computers in parallel to create respective LOD representations of the

selected three dimensional objects stored at the other computers (column 7 lines 35-50);

communicating the respective LOD representations of the selected three dimensional objects

from the plurality of other computers in parallel over the network to the first computer (column 5

lines 25-50 and column 7 lines 35-50), and processing the received LOD representations in a

graphics rendering pipeline in the first computer to create a display image of a three dimensional

scene (column 7 lines 35-50). However, Freedman et al does not specifically mention mesh, this

is disclosed in Hoppe in column 17 lines 33-65). It would have been obvious to one of ordinary

skill in the art at the time the invention was made to use the mesh of Hoppe with the system of

Freedman et al because models in computer graphics are often represented using triangle

meshes because it is easier to associate attributes with it (column 1 lines 20-25 and lines 55-60).

15.   As per claim 9, Freedman et al discloses wherein the requests include a specified level of

detail for creation of the LOD mesh representations from the stored high resolution three

dimensional objects (column 7 lines 35-50).

16.   As per claim 10, Freedman et al discloses wherein the creating step includes creating

LOD representations of the three dimensional objects with the specified level of detail as

contained in the requests (column 7 lines 35-50).

17.   As per claim 11, Freedman et al discloses receiving an input from a user on the first

computer column 5 lines 25-50); processing the input to determine a first three dimensional scene

that corresponds with the input (column 5 lines 25-50); and receiving subsequent inputs from the

user and processing the inputs to determine subsequent three dimensional scenes that

correspond with the subsequent inputs, wherein the user interactively controls the display of the

subsequent three dimensional scenes by subsequent inputs (column 5 lines 25-50).

18.   As per claim 16, Freedman et al does not disclose wherein the workstations create

meshes comprising LOD representations of the three dimensional objects with the specified level

of detail as contained in the requests. However, this is disclosed in Hoppe in column 17 lines 33-

65). It would have been obvious to one of ordinary skill in the art at the time the invention was

made to use the mesh of Hoppe with the system of Freedman et al because models in computer

graphics are often represented using triangle meshes because it is easier to associate attributes

with it (column 1 lines 20-25 and lines 55-60).

19.   As per claims 23, 28, 32 and 33, Freedman et al discloses a method of displaying a three

dimensional scene image, comprising: from a first computer coupled to a display (fig 3),

transmitting a retrieval request to each of a plurality of second computers storing three

dimensional scene objects distributively stored at said second computers together with

associated identifiers (column 5 lines 25-50 and column 7 lines 35-50), said stored three

dimensional scene objects collectively representing a three dimensional scene, said retrieval

request including identifiers associated with stored scene objects representing at least a portion

of the three dimensional scene selected for display (column 7 lines 35-50); the second computers

retrieving and processing in parallel three dimensional scene objects-stored at individual ones of

the computers based on matches between three dimensional scene object identifiers in the

received request and three dimensional scene objects stored at the second computers (column 5

lines 25-50); the second computers communicating the processed three dimensional scene

object in parallel to a graphics rendering pipeline processor in the first computer to render and

create a display a representation of the selected portion of the three dimensional scene

assembled from the three dimensional scene object communicated by the plurality of second

computers to the first computer (column 5 lines 25-50). However, Freedman et al does not

specifically mention mesh, this is disclosed in Hoppe in column 17 lines 33-65). It would have

been obvious to one of ordinary skill in the art at the time the invention was made to use the

mesh of Hoppe with the system of Freedman et al because models in computer graphics are

often represented using triangle meshes because it is easier to associate attributes with it

(column 1 lines 20-25 and lines 55-60).

20.   As per claims 24, 29 and 34, Freedman et al discloses wherein each three dimensional

scene object identifier includes the location of that object in the three dimensional scene (column

7 lines 35-50).

21.   As per claims 25, 29 and 35, Freedman et al discloses wherein the three dimensional

scene objects stored at the second computers include information concerning one or more of

geometry, color and texture of the object (column 5 lines 25-50).

22.   As per claims 26, 30 and 36, Freedman et al discloses wherein the stored three

dimensional scene objects are distributed in a predetermined manner amongst the plurality of

second computers (column 5 lines 25-50).

Allowable Subject Matter

23.   Claims 7,27 and 30 are objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims.

24.   Claim 31 is allowed.

25.   The following is a statement of reasons for the indication of allowable subject matter:

Prior art of reference fails to disclose where a first computer transmits to and distributively storing

at a plurality of second computers a plurality of three dimensional scene objects together with

associated identifiers, said three dimensional scene objects stored at the second computers

collectively representing a three dimensional scene, and storing at the first computer, identifiers

for the respective three dimensional scene objects stored at the plurality of second computers.

Any inquiry concerning this communication or earlier communications from the examiner

should be directed to **Scott Wallace** whose telephone number is **703-605-5163**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, **Mark Zimmerman**, can be reached at 703-305-9798.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,

Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600